

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 4, 6-7, 11 and 13-15 are pending in the application. Claims 1 and 4 are amended; and Claims 14-15 are newly added by the present amendment. Support for new and amended claims can be found in the original specification, claims and drawings. No new matter is presented.

In the Office Action, Claims 1, 4, 6-7, 11 and 13 are rejected under 35 U.S.C. § 103(a) as unpatentable over Trossen et al. (U.S. Pat. 7,054,643, herein Trossen) in view of Kim et al. (U.S. Pat. 7,286,558, herein Kim).

In response to the rejection noted above, Applicants respectfully submit that amended independent Claims 1 and 4 recite novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 1, for example, recites, in part, a radio communication system for performing multicast communication comprising:

a reception ability value collector configured to collect a reception ability value of each mobile station belonging to a specific multicast group ...

a transmission method determiner configured to determine a transmission method of transmitting information in accordance with the collected reception ability value and the available radio resources, so that a ***mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method***; and

a transmitter configured to transmit the information to each mobile station belonging to the specific multicast group using the determined transmission method ***without precluding a new mobile station that attempts to join the specific multicast group from joining the specific multicast group***.

Independent Claim 4, while directed to an alternative embodiment, is amended to recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1 and 4.

Turning to the applied references, Trossen describes a node for transmitting multicast data over a wireless channel and determining a data rate for such a transmission. Trossen describes that the node 207 receives a measured signal-to-noise ratio (SNR), or similar quality measure, reported using signaling messages from a wireless terminal 101.¹ The node 207 groups wireless terminals having approximately equal SNR measurements, and determines a corresponding maximum data rate for each group.² Trossen further describes breaking the data to be transmitted into a plurality of layers on the basis of bandwidth requirements, and transmitting selected layers to each group of mobile stations based on the data rate for each group.³

Kim, the secondary reference, describes a method and device for transmitting reverse data rate information in a mobile communication system supporting multimedia service applications including voice and data services.⁴ More particularly, Kim describes determining a number of supplemental channels (SCH) and a maximum data rate of a SCH based on the buffer size of a mobile station.⁵

Trossen and Kim, however, even if combined, fail to teach or suggest “determin[ing] a transmission method ... so that a *mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method*”, as recited in independent Claims 1 and 4.

In rejecting the above noted claimed feature, the Official Action relies on col. 5, lines 20-43, col. 6, lines 4-24, col. 7, lines 60-67 and col. 8, lines 1-13 of Trossen. These cited portions of Trossen describe the node 207 converts a SNR measurement or a similar quality measure of a mobile terminal to a corresponding maximum data rate that wireless terminal can support. Then, when a plurality of wireless terminals 161, 162 have approximately equal

¹ Trossen, col. 5, ll. 11-15 and col. 12, ll. 43-46.

² Id., col. 5, ll. 23-26, col. 6, ll. 21-24, Fig. 9 step 905, and col. 12, ll. 51-55.

³ Id., col. 4, ll. 21-25.

⁴ Kim, Abstract.

⁵ Id., col. 8, ll. 31-34.

SNR measurements, the terminals can be grouped together to receive the same multicast layers from the node 207.

As described at col. 3, ll. 35-39 of Trossen, each of the wireless terminals 101, 151, 161 and 162 join a specific multicast group (e.g. a multicast service of the Rolling Stones), and then, as described at col. 4, ll. 6-9, each of the wireless terminals report corresponding measurements indicative of wireless propagation characteristics of signals received from the base station. Based on the reported measurements, the base station determines a maximum transmission rate of each terminal, and determines how the wireless terminals should be classified to receive layers of data requiring varying bandwidths of resources.

The base station in Trossen, therefore, does not “determine a transmission method ... so that a *mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method*”, but instead analyses the maximum data rate that each wireless terminal can support, and customizes the layer(s) of data transmitted to each of wireless terminals accordingly. Claims 1 and 4, on the other hand, clearly recite that each of the terminals belonging to the specific multicast group (e.g. broadcast of Rolling Stones in the case of Trossen) report a reception ability value, and the transmission method, for transmission of data to each base station in the group, is selected so that a mobile station equipped with a lowest reception ability can receive the information using the determined transmission method.

Trossen, on the other hand, describes that each of the wireless terminals in the group are classified based on a corresponding maximum data rate that wireless terminal can support, and that the data is transmitted to the wireless terminals in each classification using a different transmission method (e.g. transmitting different layers). Specifically, col. 8, ll. 1-13 of Trossen describes a specific example, in which one wireless terminal in the multicast group is unable to properly receive data because the transmitted data is beyond the reception

ability of the wireless terminal. In this example, Trossen specifically describes that MS₁ does not process the data addressed to L₂ because transmission rate R₂ may be too high for MS₁ to reliably receive the data. Trossen further describes that precluding MS₁ from receiving L₂ also avoids the usage of battery power for processing data that may not be correctly decoded by MS₁. This is a clear example of a case in Trossen in which a mobile station belonging to the multicast group is unable to receive data because the data is not transmitted using a method determined “so that a *mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method*”.

Therefore, Trossen and Kim, even if combined, fail to teach or suggest a radio communication system including “a transmission method determiner configured to determine a transmission method of transmitting information ... so that a *mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method*” and “a transmitter configured to transmit the information ... using the determined transmission method *without precluding a new mobile station that attempts to join the specific multicast group from joining the specific multicast group*”, as recited in independent Claims 1 and 4.

Accordingly, Applicants respectfully request the rejection of Claims 1 and 4 (and the claims that depend therefrom) under 35 U.S.C. § 103(a) be withdrawn.

Further, new Claims 14 and 15 are presented, which depend from Claims 1 and 4 respectively, and recite that “the transmission method determiner is configured to determine the transmission method so that the mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method, *even when at least one mobile station capable of receiving the*

information using a transmission method corresponding to a more robust reception ability value exists in the specific multicast group.”

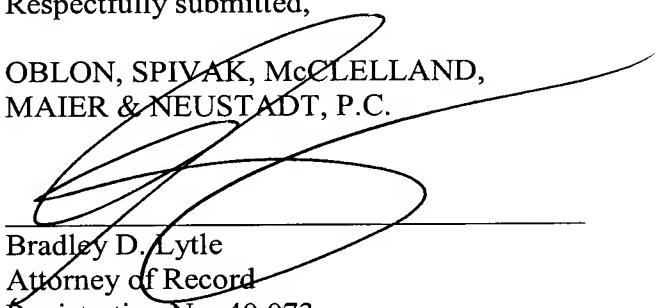
As noted above, Trossen fails to teach or suggest such a claimed feature because the wireless terminals in his system are classified on the basis of maximum transmission rates, and the terminals receive differing layers of data based on their respective rates. Claims 14 and 15, on the other hand, specify that terminals capable of receiving higher quality data in the specific multicast group still receive data in accordance with the transmission method selected for the mobile station belonging to the specific multicast group equipped with a lowest reception ability.

Accordingly, Applicants respectfully submit that new dependent Claims 14 and 15 also patentably define over the applied references.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1, 4, 6-7, 11 and 13-15 patentably defines over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

Andrew T. Harry
Registration No. 56,959